REMARKS

This application has been carefully reviewed in light of the Office Action dated February 28, 2002. We enclose our check for the additional fee required by the amendments to the claims made with this Amendment. Claims 1 to 21 are currently active in this case. Reconsideration of this application is requested.

Applicants appreciate the Office's acknowledgment of receipt of the claim for priority and the certified copies of the priority documents.

ALLOWABLE SUBJECT MATTER

Claim 13 has been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. Claim 13 has been accordingly rewritten in independent form. Full allowance of Claim 13 is requested.

CLAIM REJECTIONS – 35 U.S.C. §103

Claims 1 to 3, 5, 6, 8, 9, 11, 12, 15, 17 to 19, 20 and 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Palmer U.S. Patent No. 6,285,481B1 [hereinafter "Palmer,"] in view of the Batey, Jr., et al. U.S. Patent No. 6,104,512 [hereinafter "Batey."] Claims 5 and 18 have been amended explicitly to claim that which was implicit before. This rejection is respectfully traversed.

Palmer discloses a free-space laser communications error control system. Each control system 100A, 100B of Palmer includes a control circuit that transmits a signal strength data stream between each pair of communicating laser transceivers. The signal strength data stream indicates the signal strength of the sending transceiver as actually received by the remote receiving transceiver. If the sending transceiver receives data from the remote receiving

transceiver indicating that the signal strength of the sending transceiver has fallen to or below a selected threshold, or if the sending transceiver cannot detect the signal strength data stream, then the sending transceiver suspends transmission of information packets. The sending transceiver resumes transmission of information packets when the indicated signal strength level returns to an acceptable level.

Batey discloses a method of adjusting the power level of an infrared signal. An electronic device 50 has an infrared transceiver 510 with adjustable infrared signal intensity capability. The electronic device 50 establishes communication with a secondary device 420, 430. As noted in column 10, lines 11 to 30, power-related information in the form of a bit error rate (BER) measurement is incorporated into a handshake protocol exchanged between the electronic device 50 and the secondary device 420, 430 during transmission of data and idle frames. The BER measurement allows the primary device 50 and the secondary devices 420, 430 dynamically to adjust power throughout a session.

The independent apparatus claims of this application provide for a digital optical communication device with a decoding circuit that decodes an electrical signal resulting from conversion by an optical reception circuit and judges whether or not the decoding is normally completed. The method claims contain similar recitations. This aspect of applicants' invention is neither suggested nor disclosed in the cited references, as the Examiner has recognized on page 3 of the Action. There is no support for the Examiner's position that it is "well known in the art to use a decoding circuit that judges whether or not the decoding is normally completed." Applicants point out that such is not shown in Batey or Palmer. If the Examiner is taking some kind of Official Notice of prior art, pursuant to the provisions of M.P.E.P. Section 2144.03 (8th Edition), applicants traverse the Examiner's statement. Applicants demand evidence supporting the Examiner's position. This is the first instance of the Examiner's reliance on common knowledge in the art, and this constitutes a seasonable challenge made as soon as practicable during prosecution.

Regarding Claims 1 to 3, 5, 6, 8, 9, 11, 12, 15, 17 to 19, 20 and 21, Palmer, in particular, discloses that data indicative of the loss of signal strength is detected at the receiver to suspend data communication. In other words, communication is impossible upon occurrence of any error. By contradistinction, the present invention controls the transmission power/light emission power for successfully continuing communication all the time, instead of suspending communication. Batey determines whether data is successfully received or not for controlling power. However, Batey uses no information regarding the strength of an actually received signal.

Regarding Claim 2, the threshold values (reference voltages) defined as described in the specification of the present invention are advantageous because a plurality of threshold values are available.

For general infrared communication, the intensity of received light is inversely proportional to the square of the communication distance, supposing that the intensity of the emitted light is constant. In some cases, the amplifier circuit has an automatic gain control function that adjusts the amplification factor depending on the intensity of the incident light. Accordingly, the intensity of the received light is not inversely proportional to the communication distance. Then, if the reception light intensity level judgment circuit judges the intensity of the received light on the precondition that the communication distance is inversely proportional to the intensity of the received light, fine adjustment of the intensity of emitted light may indeed be possible for relatively short communication distance, but the intensity of the emitted light cannot be adjusted for any communication distance that is relatively long. Consequently, the intensity of the emitted light cannot be adjusted according to the communication distance.

In contrast, according to the present invention, any arbitrary threshold value having an appropriate value may be selected to judge the intensity of the received light and adjust the intensity of the emitted light according to the communication distance. Palmer and Batey are silent on this feature.

Applicants disagree with the Examiner's position that Palmer and Batey teach the invention of Claim 3. Batey merely teaches that the power level is increased if no ACK is received.

Regarding Claims 11, 15 and 20, Batey does not disclose, by the "handshaking" protocol, that light emission intensity requests are exchanged. Thus, applicants believe that Batey does not teach the claimed invention.

Regarding Claim 12, Batey does not disclose detection of a start flag and a stop flag. Thus, applicants submit that Batey does not teach the claimed invention.

The cited references to columns 2, 3, 4, 5, 6, and 8 of Batey provide no support to the Examiner's position. Column 10 of Batey merely provides that the electronic device 50 and the secondary device 420, 430 exchange signal strength information. This simple exchange of signal strength information does not indicate whether the decoding is completed, as required by the independent claims of this application.

Accordingly, Claims 1 to 3, 5, 6, 8, 9, 11, 12, 15, 17 to 19, 20, and 21 are believed patentably distinguishable over the cited references, and their allowance is requested.

Claims 4, 7, 10, 14 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Palmer in view of Batey, and further in view of the Minteer U.S. Patent No. 6,188,494B1 [hereinafter "Minteer."]. This rejection is respectfully traversed.

Minteer discloses a fiber optic transceiver for long distance data communications.

Regarding Claims 4, 7, 10, 14, and 16, as indicated by the Examiner, Palmer and Batey do not disclose that the intensity of the emitted light is controlled in optical fiber communication. Further, there is no disclosure regarding the control of the intensity of the emitted light in optical

fiber communication. In addition, Minteer does not disclose reducing the power necessary for communication by control of the emission light intensity. Rather, Minteer discloses reducing the power required for communication by means of modulation. Accordingly, Minteer is essentially different from the present invention.

Further, Claims 4, 7, 10, 14, and 16 depend from Claims 1, 5, 8, 11, and 15, respectively. Minteer does not remedy the defects discussed above with respect to those independent claims and Palmer and Batey. Hence, for the reasons advanced above with respect to independent Claims 1, 5, 8, 11, and 15, Claims 4, 7, 10, 14, and 16 are also believed allowable, and such action is requested.

In view of the above discussion and amendments, it is respectfully submitted that the present application is in condition for allowance. Therefore, reconsideration and allowance are requested.

Applicants also enclose a marked-up version of the changes made to the claims by the current amendment.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Words to be added are indicated by underscore, while words to be deleted are indicated by [brackets].

Kindly amend Claims 5, 13 and 18 as follows:

5. (Amended) A digital optical communication device comprising:

an optical reception circuit converting an optical signal received from any external source to an electric signal;

a decoding circuit decoding the electric signal resultant from conversion by said optical reception circuit, judging whether or not the decoding is normally completed, and extracting reception light intensity information of a secondary station;

a coding circuit coding transmission data; and

an optical transmission circuit determining a light emission intensity based on the reception light intensity information of the secondary station extracted by said decoding circuit, and converting the transmission data coded by said coding circuit to an optical signal with the light emission intensity.

13. (Amended) [The] A digital optical communication device [according to claim 11,] comprising:

an optical reception circuit converting an optical signal received from any external source to an electric signal;

a decoding circuit decoding the electric signal resultant from conversion by said optical reception circuit, extracting a light emission intensity requested from a secondary station, and judging whether or not the decoding is normally completed;

a reception light intensity level judgement circuit judging a reception light intensity level based on the electric signal resultant from conversion by said optical reception circuit;

a secondary station request light emission intensity control signal generation circuit generating light emission intensity information requested to the secondary station based on result

of the judgement by said decoding circuit and on the reception light intensity level judged by said reception light intensity level judgement circuit;

a coding circuit coding transmission data and the light emission intensity information requested to the secondary station generated by said secondary station request light emission intensity control signal generation circuit; and

an optical transmission circuit converting the transmission data and the light emission intensity information requested to the secondary station that are coded by said coding circuit with the light emission intensity requested from the secondary station that is extracted by said decoding circuit;

wherein said reception light intensity level judgement circuit judges the reception light intensity level by measuring a pulse width of the electric signal resultant from conversion by said optical reception circuit.

18. (Amended) A digital optical communication method comprising the steps of:

converting an optical signal received from any external source to an electric signal;

decoding said electric signal resultant from conversion, judging whether or not the decoding is normally completed, and extracting reception light intensity information of a secondary station;

coding transmission data; and

determining a light emission intensity based on said extracted reception light intensity information of the secondary station, and converting said coded transmission data to an optical signal with the light emission intensity.